

CLAIMS

1. A lithium secondary battery comprising: a positive electrode comprising a composite lithium oxide; a negative electrode comprising a material capable of absorbing and desorbing lithium; a separator interposed between said positive electrode and said negative electrode; and a non-aqueous electrolyte,

wherein said separator comprises non-woven fabric, at least one of said positive electrode and said negative electrode has a porous film that is adhered to a surface thereof, and said porous film comprises an inorganic oxide filler and a binder.

2. The lithium secondary battery in accordance with claim 1, wherein said non-woven fabric has a thickness of not less than 15 μm and not more than 50 μm .

3. The lithium secondary battery in accordance with claim 1, wherein said non-woven fabric has a melt-down temperature of 150°C or more.

4. The lithium secondary battery in accordance with claim 1, wherein said non-woven fabric comprises at least one selected from the group consisting of polypropylene, polyamide, polyimide, and polyethylene terephthalate.

5. The lithium secondary battery in accordance with claim 1, wherein said porous film has a thickness of not less than 0.5 μm and not more than 20 μm .

6. The lithium secondary battery in accordance with claim 1, wherein said binder comprises at least a polymer having an acrylonitrile group.

7. The lithium secondary battery in accordance with claim 1, wherein said filler comprises alumina, and the content of said filler in said porous film is not less than 50% by weight and not more than 99% by weight.

8. The lithium secondary battery in accordance with claim 1, wherein said positive electrode and said negative electrode are wound with said separator interposed therebetween.